

REMARKS

Claims 10 and 12-16 have been rejected under 35 USC 112, second paragraph. Claims 10 and 12 have been amended to properly recite that the variable falls "above" a specified threshold value, consistent with paragraphs [0025] and [0026] of the instant specification.

Claims 10 and 12 have been rejected under 35 USC 103(a) as unpatentable over Bosch ('900) in view of Rembold ('622). The rejection is respectfully traversed.

The Examiner concedes that Bosch fails to disclose determination of an actuating signal as a function of the desired fuel pressure and a variable if the variable falls above a specific threshold value, as recited in the claimed invention. However, the Examiner newly cites Remold as disclosing this feature. Specifically, the Examiner states that "Remold teaches a magnetically operate d spill valve for a common rail that uses a particular calculation method whenever the difference between an actual pressure and a set point pressure exceeds a threshold value (D). The Examiner then comments it would have been obvious "to use this standard to trigger the calculation taught by Bosch." Applicants respectfully disagree.

Rembold realtes to a process and device for controlling an internal combustion engine. Pressure of the fuel in the high-pressure area is regulated to a predefinable value using a regulating means. The regulating means is activated immediately prior to and/or during the time when the injectors are activated to increase the pressure. More specifically, with reference to Fig. 4b of Rembold and col. 5 lns. 1-11, a value D is defined as a function F of at least the speed N. A check is made to determine whether the difference between setpoint PS (where PS is sored in a table as a function of parameters, as disclosed in col. 4, lns. 5-15, notably tied to the speed of the internal combustion engine), less the actual pressure PI, is greater than D. If the PI differs from PS by more than a difference D, a switching mode operation is started. This means that pressure regulating valve 130 is activated so that it closes, allowing pressure to build.

The instant invention operates by determining the actuating signal for the regulator valve as a function of a desired fuel pressure and of a variable characterizing the dynamics of the flow of fuel through the regulator valve, the fuel pressure being accurately adjusted independently of the operating stage of the engine. Specifically, the claimed invention requires that the actuating signal is determined as a function of the desired fuel pressure and a variable if the variable falls above a specified threshold value, where variable is selected form the group consisting of: a

variation in a fuel flow rate and a variation in the fuel pressure. This is contrary to the calculation that is provided in Rembold, which calculation is based on determining whether value D (which is a function F or at least the rotation speed N) is less than the difference between PS less PI. This calculation is therefore based at least in part on the rotation speed of the engine, an issue that is resolved by the claimed invention, namely adjusting fuel pressure independently of the operating state of the engine. That is, the calculation in the claimed invention is based on a variable selected from the group of: variation in fuel flow rate and a variation in fuel pressure. The mere fact that a comparison is used in Rembold is irrelevant. Indeed, there is no threshold value that is met. Rather, a comparison is made to during a calculation to determine whether pressure should be regulated. The stated “threshold” relates to whether a change from switching to control mode and vice versa should be made (col. 5, lns. 9-11). See also col. 2, ln. 66 – col. 3, ln. 15, which states in part: “The device operates as follows: Based on the comparison between setpoint PS...and actual value PI...controller 200 computes a control signal....” (Emphasis added).

Additionally, there is no realistic reason why the skilled artisan would use the calculation method disclosed in Rembold with the system of feedback control of accumulator pressure as disclosed in Bosch. As previously explained, Bosch regulates pressure in a fuel supply accumulator based on data such as high pressure flow and fuel density, where the stored relationships between valve flow, electric signal and stored pressure speed up the calculation. Addition of a “threshold” value (even assuming *arguendo* one is indeed disclosed) into the Bosch system still requires that the calculation be based on the operating state of the engine, and would not provide any additional benefit with respect to the calculation.

Claims 13-16 have been rejected under 35 USC 103(a) as unpatentable over Bosch in view of Rembold and Frank ('149). The rejection is respectfully traversed for at least the same reasons presented in the arguments above, and since Frank fails to remedy the deficiencies.

Entry of this amendment after final is appropriate since the claim amendments only clarify issues related to 35 USC 112, second paragraph and reduce any issues for Appeal.

In view of the above, Applicants submit that this application is in condition for allowance. An indication of the same is solicited. The Commissioner is hereby authorized to charge deposit account 02-1818 for any fees which are due and owing, referencing Attorney Docket No. 119618-2.

Respectfully submitted,

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